
1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name GARLAND COPPER COMPLEX
Synonyms GOLD COMPLEX

1.2 Uses and uses advised against

Uses SURFACE FINISHING

1.3 Details of the supplier of the product

Supplier name DUBOIS CHEMICALS AUSTRALIA PTY LIMITED
Address 305 Frankston Dandenong Rd, Dandenong South, VIC, 3175, AUSTRALIA
Telephone (03) 9768 3860
Email sales@duboischchemicals.com.au
Website <http://duboischchemicals.com.au/>

1.4 Emergency telephone numbers

Emergency 13 11 26 (Poisons Information Centre)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Acute Toxicity: Oral: Category 3
Acute Toxicity: Skin: Category 1
Skin Corrosion/Irritation: Category 1B
Serious Eye Damage / Eye Irritation: Category 1
Acute Toxicity: Inhalation: Category 4
Specific Target Organ Toxicity (Single Exposure): Category 3 (Respiratory Irritation)
Contact with acids liberates very toxic gas.

Environmental Hazards

Aquatic Toxicity (Chronic): Category 2

2.2 GHS Label elements

Signal word DANGER

Pictograms



PRODUCT NAME GARLAND COPPER COMPLEX**Hazard statements**

AUH032	Contact with acids liberates very toxic gas.
H301	Toxic if swallowed.
H310	Fatal in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.

Prevention statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response statements

P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTRE or doctor/physician.
P321	Specific treatment is advised - see first aid instructions.
P361 + P364	Take off immediately all contaminated clothing and wash it before reuse.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.

Storage statements

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.
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2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
POTASSIUM CYANIDE	151-50-8	205-792-3	1 to <5%
COPPER DICYANIDE	14763-77-0	238-826-0	<1%
ADDITIVE(S)	-	-	Remainder

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use a Full-face Type B2/3 (Acid gas and hydrogen cyanide) or an Air-line respirator (in poorly ventilated areas). Give oxygen and if necessary, artificial respiration. If giving mouth to mouth, wash out patients mouth and lips-do not inhale patients expired air. Remove contaminated clothing and wash before reuse.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Urgent hospital treatment is likely to be needed.
First aid facilities	Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Carbon dioxide extinguishers should not be used as contact with cyanides may result in the evolution of flammable hydrogen cyanide gas.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve flammable and toxic hydrogen cyanide gas in contact with acids, acid salts or carbon dioxide. May evolve nitrogen oxides when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic and flammable gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire.

5.4 Hazchem code

2X
2 Fine Water Spray.
X Wear liquid-tight chemical protective clothing and breathing apparatus. Contain spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store (bulk) in a secured, windowless but well ventilated area with a minimum 2 metre fence with rain and fire proof cover, removed from direct sunlight, incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Containers should be stored off ground.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Cyanides (as CN)	SWA [AUS]	--	5	--	--
Cyanides and cyanide salts	SWA [Proposed]	--	1	--	--
Cyanides and cyanide salts (peak limitation)	SWA [Proposed]	--	5 (Peak)	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

PPE

- Eye / Face** Wear splash-proof goggles.
- Hands** Wear full-length butyl or full-length neoprene gloves.
- Body** Wear coveralls and rubber or PVC boots. When using large quantities or where heavy contamination is likely, wear impervious coveralls.
- Respiratory** Wear a Full-face Type B2/3 (Acid gas and Hydrogen cyanide) respirator. When using large quantities or where heavy contamination is likely, wear an Air-line respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	CLEAR TO OFF WHITE LIQUID
Odour	CHARACTERISTIC ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	10 to 12
Vapour density	NOT AVAILABLE
Relative density	1.0
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

Freezing point	NOT AVAILABLE
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10. STABILITY AND REACTIVITY

PRODUCT NAME GARLAND COPPER COMPLEX

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), reducing agents (e.g. sulphites), water (evolving toxic and flammable gases), nitrating agents, indium, dinitrogen tetroxide, nitrogen-fluorine compound, heat and ignition sources. Will attack some forms of rubber and plastic. Also incompatible with carbon dioxide (evolving toxic and flammable gases), copper, zinc, magnesium, tin, aluminium and their metal alloys.

10.6 Hazardous decomposition products

May evolve nitrogen oxides when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Fatal in contact with skin. Toxic if swallowed. Harmful if inhaled. Ingestion may result in severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
POTASSIUM CYANIDE	5 mg/kg (rat, rabbit)	--	--

Skin Causes burns. Contact may result in irritation, redness, pain, rash, dermatitis and possible severe burns.

Eye Causes burns. Contact may result in irritation, lacrimation, pain, redness and corneal burns with possible permanent eye damage.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Over exposure can lead to cyanide poisoning which depresses the central nervous system. Symptoms include headache, weakness, confusion, nausea, dizziness, coma and even death. Mild exposure results in eye, nose and throat irritation.

STOT - repeated exposure Individuals with pre-existing kidney, respiratory, skin or thyroid diseases are at a greater risk of developing toxic cyanide effects. Cyanide is reported to cause damage to the central nervous system. Death usually occurs due to respiratory arrest.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Cyanides have been shown to be inherently biodegradable (99%) after adaptation of organisms to non-toxic concentrations (ECHA).

12.3 Bioaccumulative potential

Cyanides have a log Kow less than 1 and bioconcentration factor (BCF) of approximately 3; therefore, cyanides are not considered to be bioaccumulative (ECHA).

12.4 Mobility in soil

No information provided.

PRODUCT NAME GARLAND COPPER COMPLEX**12.5 Other adverse effects**

Avoid contamination of drains and waterways.

13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

Waste disposal For small quantities, wear protective equipment and collect (if solid) or absorb with vermiculite or similar (if liquid). Treat with strongly alkaline solution of calcium hypochlorite (CAUTION: Toxic gases may be generated), let stand for 24 hours, absorb with sand or similar and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1935	1935	1935
14.2 Proper Shipping Name	CYANIDE SOLUTION, N.O.S. (contains potassium cyanide and copper cyanide)	CYANIDE SOLUTION, N.O.S. (contains potassium cyanide and copper cyanide)	CYANIDE SOLUTION, N.O.S. (contains potassium cyanide and copper cyanide)
14.3 Transport hazard class	6.1	6.1	6.1
14.4 Packing Group	II	II	II

14.5 Environmental hazards

Marine Pollutant.

14.6 Special precautions for user

Hazchem code 2X
Specific EPG 6.0.009
EmS F-A, S-A

Other information The environmentally hazardous substance mark is not required when transported in packages of less than 5 kg/L (UN Model Regulations: Special Provision 375; IATA: Special Provision A197; IMDG: Special Provision 969) or less than 500 kg/L by Australian Road and Rail.

15. REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Poison schedule Classified as a Schedule 7 (S7) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

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RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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